

Recommendations *of the* Governor's Innovation-to-Jobs Working Group

March 2015



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BACKGROUND

Innovation is the modern economy's fuel. As the primary source of new products, services, and practices that yield value, innovation is what creates new industries, makes existing ones globally competitive, and sustains economic growth and improved societal well-being. In terms of productivity and growth, studies value the economic return on research, development, and innovation to be four times the return on investment in physical capital. Put another way, between one-third to one-half of economic growth can be attributed to innovation.¹ A high-productivity, high-employment, high-income, growing economy must be an innovation-fueled economy.

Innovation has many sources, but science (the creation and organization of knowledge) and technology (the practical application of knowledge) are its fundamental elements. On those two fronts, studies show that North Carolina has some of the strongest raw materials for innovation, ranking 5th nationally in academic science & engineering research & development (R&D) as a share of gross domestic product.²

At the same time, however, North Carolina's technology commercialization and high-tech business activity consistently rank below the U.S. average and are typically in the second or third quartile among U.S. states in rank order.² At a time when the state's private sector investment in R&D lags that of its competitors, the ability to capitalize on university R&D is critical to our state's future economic success. North Carolina's translation of its fundamental innovation advantage into follow-on economic advantage has been relatively ineffective. The state has unrealized economic potential on this front.

RESPONSE

When Governor Pat McCrory took office in January 2013, one of his key goals was to help North Carolina's universities and businesses maximize the economic and social benefits of the state's world-class knowledge creation, technology, and innovation. To do so, he went to the front lines of the economy, both within the state and nationally.

He began that spring by convening North Carolina's venture capital and business investment leaders to hear, first-hand, the challenges they face in commercializing innovations and growing early stage technology based businesses. Based on their input, he followed up with by meeting with university, business, and investment leaders in California's Silicon Valley to learn more about their successes and to get their perspectives on North Carolina's challenges and opportunities. The takeaway message from these two listening exercises was clear and direct:

North Carolina has the intellectual and innovative capacity to compete with any state or nation; what it lacks is the optimal mix of processes, resources, and people to convert that capacity into new products and services that lead to increased economic activity and jobs. North Carolina's innovation commercialization ecosystem can be improved.

To respond to this challenge, in spring 2014 Governor McCrory convened the leaders of North Carolina's major universities and research organizations, as well as investors and industry representatives, to form an *Innovation-to-Jobs Working Group*. He charged the Group with two tasks:

1. Conduct a comprehensive, statewide assessment of North Carolina's innovation-to-jobs challenges;
2. Develop a short list of targeted, actionable recommendations that will effectively address the major challenges in North Carolina's innovation commercialization ecosystem.

¹ United States Department of Commerce. 2012. *The Competitiveness and Innovative Capacity of the United States*. Washington, DC: U.S. Dept. of Commerce.

² North Carolina Board of Science, Technology & Innovation. 2013. *Tracking Innovation: North Carolina Innovation Index*. Raleigh, NC.

The Working Group held eight meetings in summer and fall 2014, during which it conducted a detailed statewide survey of more than 500 well-informed, experienced university and business stakeholders and drew upon the in-depth knowledge of its members to identify the following three major barriers to innovation commercialization in the state:

- **Translation** – Insufficient development and/or dissemination of university-based structures and practices for technology commercialization;
- **Capitalization** – Insufficient funding for technology proof of concept, validation, intellectual property (IP) protection, commercialization, early and mid-stage product development/production, and business expansion;
- **Operation** – Insufficient number and utilization of seasoned, mature, business professionals to run startups and guide companies through growth and expansion.

The Working Group then went back to the stakeholders and solicited their ideas for how to address these barriers. After receiving more than 60 detailed white papers from those stakeholders, the Working Group reviewed and evaluated each idea, resulting in a list of six recommendations, each satisfying the following four criteria:

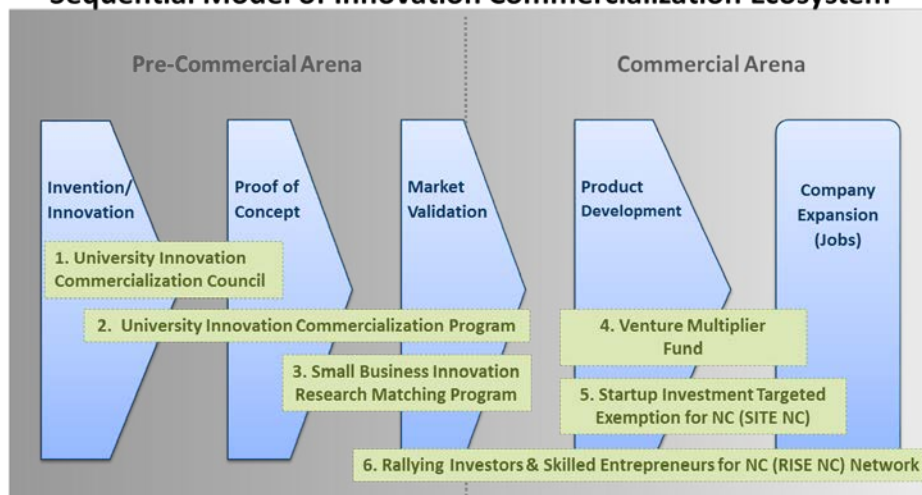
- Clearly and directly target one or more of the identified challenges;
- Build upon the state’s existing strengths, in both the public and private sectors;
- Minimize the creation of new organizations and structures, public or private;
- Efficiently and effectively use public and private funds to generate economic impact.

These six recommendations—displayed graphically in the figure below to show where they fit in the state’s innovation commercialization ecosystem—are summarized in the following table and explained in more detail in the following pages. These recommendations are intended to serve as a substantive “front-burner” action plan to jump start and improve North Carolina’s innovation commercialization ecosystem.

I2J Working Group Recommendations

(Integrated Plan for I2J)

Sequential Model of Innovation Commercialization Ecosystem



SUMMARY OVERVIEW OF RECOMMENDATIONS

RECOMMENDATION	SUMMARY	COST	SOURCE
<i>Developing and Positioning Pre-Commercial Innovations for the Market</i>			
1. University Innovation Commercialization Council	Defines best practices for innovation commercialization at NC universities, promotes inter-university cooperation and standardization where possible, and catalyzes transformation in culture to encourage technology commercialization	No new funding needed	Expenses minimal and absorbed by participants
2. University Innovation Commercialization Program	Provides funding and process for technology proof of concept, validation, commercialization, translation, etc., for technologies developed by NC universities and research not-for-profits	\$10MM annually, phased in over four years	Expanded state appropriations
3. Small Business Innovation Commercialization Program	Renames the existing "One NC Small Business Program" the "Small Business Innovation Commercialization Program," and appropriates sufficient funding to support eligible applicants at 100 percent of the statutory maximum	Recurring \$5MM annually, ongoing as needed.	Expanded state appropriations
<i>Accelerating Growth of Commercial Innovations in the Market</i>			
4. Startup Investment Targeted Exemption for NC (SITE NC) Designation	Creates the Startup Investment Targeted Exemption for NC (SITE NC) designation, authorizing an exemption from NC capital gains taxes on investments in NC-headquartered (i.e., sited) startups	Capped at level determined by Governor and Legislature	Tax exemption
5. Venture Multiplier Fund	Creates early stage investment fund, of fund-of-funds and direct-investment, to invest in early stage commercial ventures	\$120 million, one time from investible funds	Long-term investible state-focused funds
6. Rallying Investors & Skilled Entrepreneurs for NC (RISE NC) Network	Creates a statewide network that develops and leverages existing NC entrepreneurial management talent and recruits world-class investors, skilled entrepreneurs, and managers to NC	\$7.5MM annually, for three years	Expanded state appropriations, leveraged 1:2 by foundation, corporate, and private sources

1. UNIVERSITY INNOVATION COMMERCIALIZATION COUNCIL

RECOMMENDED ACTION: Creates a council of senior technology commercialization staff from the state's public and private universities, as well as entrepreneurs, investors, businesses, to define best practices for innovation commercialization at NC universities, promote inter-university cooperation and standardization where possible, and catalyze transformation in culture to encourage technology commercialization.

CHALLENGE ADDRESSED: With more than \$2.5 billion in university R&D annually, NC ranks fifth nationally and, on a per capita basis, has a level of academic R&D that is one-third higher than what would be expected based on the levels of academic R&D in all other states. Despite these academic R&D strengths, NC's technology innovation commercialization and high-tech business activity are consistently below the U.S. average value and typically in the second or third quartile among U.S. states. NC's universities have unrealized potential for greater economic impact through improved and increased university innovation commercialization activities.

Current processes and practices NC universities use to commercialize innovations can be improved. Making these processes and practices more effective and efficient requires three key elements: (1) shared goals, (2) knowledge of best practices for achieving those goals, and (3) buy-in from personnel involved in achieving those goals. A council will accomplish each of these elements in a manner that maximizes consistency across the state's universities while also respecting the different needs, interests, and capabilities across universities. Additionally, the council will identify mechanisms for further meaningful collaboration based on leveraging individual university strengths.

IMPLEMENTATION DETAILS

- **Basics:** Composition of the council will consist of representatives from: (1) NC universities (public and private) with significant R&D and commercialization activities and that also represent the university diversity across the state; (2) relevant not-for-profit research institutions; (3) businesses that have licensed or been incubated at a university; (4) other groups with expertise/interests in this area; and (5) funders who have invested in, or would like to invest in, innovative technologies.
- **Organization(s):** The council will be co-chaired by representatives from UNC General Administration and the NC Department of Commerce's Office of Science, Technology & Innovation.
- **Scope:** The council will identify best practices addressing significant areas of technology transfer operations, including patents, contracts, and funding.
- **Timeframe:** Beginning spring 2015, the council will operate for 6-9 months, with the goal of defining a set of best practices that will better position university innovations for further development and commercialization via the programs outlined in the recommendations below.

RECOMMENDED FUNDING:

- **Amount:** No new funding.
- **Source:** Expenses will be minimal and absorbed by participants.

EXPECTED OUTCOMES:

- A set of best practices that serve as guidelines for individual and collective university action;
- Increased standardization of commercialization practices across universities;
- Increased quality and number of licenses and startup companies emerging from universities.

2. UNIVERSITY INNOVATION COMMERCIALIZATION PROGRAM

RECOMMENDED ACTION: Provides funding and process for technology proof of concept, validation, commercialization, translation, and other commercialization activities for technologies developed by NC universities and research not-for-profits.

CHALLENGE ADDRESSED: Technology validation is the top challenge investors face in supporting startup companies and licensing arrangements from research organizations, such as universities. Most of these technologies are too early stage to be attractive to outside investors and managers. The technologies may need additional proof-of-concept testing, or the products that could develop or benefit from the technologies may need further definition. Furthermore, the realities of assessing and developing a strategy for introducing and expanding the technologies in the marketplace are best accomplished by analysts directly familiar with the relevant industries and with strong experience in commercialization.

Despite these barriers, the gap between laboratory technology and truly viable commercial technology can be bridged by targeted strategic activities that intelligently bring promising technologies to private sector investment readiness while the technologies are still owned by their originating organization. Other states, including FL, GA, and VA, have provided significant funding and established robust programs to produce effective lab-to-market translational services. Investments of these types provide much-needed support and expertise at the most vulnerable phase of university commercialization, greatly increasing the likelihood of a meaningful return on investment in university research.

IMPLEMENTATION DETAILS

- **Basics:** The program would use NC's community of industry and commercialization experts, organized and funded through two hosting nonprofit or other relevant entities, to: (1) select university technologies based on commercial potential, (2) create a development plan of key activities to make the technologies more attractive to investors, and (3) guide implementation of these activities to assure efficient deployment of funds and commercial-quality results. Development plans would be stage-gated, with smaller levels of funding provided initially. If technologies fail at any stage of a plan, no additional funding would be allocated, thus minimizing the funding outlay. The two hosting nonprofit organizations would initially be selected through a competitive bid process. One organization would focus on life science technologies (e.g., medical, biological, agricultural); the other would focus on non-life sciences technologies (e.g., info tech, materials, cyber security). The hosts would work with the universities to guide the project. Universities would originate the candidates; the hosts would select and award the funds, and monitor milestone progress.
- **Organization(s):** The NC Department of Commerce's Office of Science, Technology & Innovation would conduct the host-organization selection process. The selected host organizations would then administer the two programs, thus leveraging existing expertise and minimizing startup costs.
- **Scope:** Public and private universities, as well as not-for-profit research entities, could participate.
- **Timeframe:** Ongoing, with periodic review to determine need for continuation.

RECOMMENDED FUNDING:

- **Amount:** \$10 million, annually, phased in over four years.
- **Source:** Expanded state appropriations.

EXPECTED OUTCOMES:

- 15 technologies per year with advanced commercial development, ready for the marketplace.
- 40 technologies per year with significantly increased commercial development.
- 2-4 new funded company launches per year.

3. SMALL BUSINESS INNOVATION COMMERCIALIZATION PROGRAM

RECOMMENDED ACTION: Renames the existing “One NC Small Business Program” the “Small Business Innovation Commercialization Program” (the Program), and appropriates sufficient funding to support all eligible applicants at 100 percent of the statutory maximum.

CHALLENGE ADDRESSED: Small businesses have tremendous potential to develop and commercialize innovative new technologies, yet they often lack the funding necessary to realize that potential. To address this funding challenge, the federal government provides—on a highly competitive basis—early stage technology commercialization funding to small businesses via two programs: *The Small Business Innovation Research (SBIR) Program* and the *Small Business Technology Transfer (STTR) Program*.

While these programs are the single largest source of early stage technology commercialization funding for small businesses, their funds are often not adequate and have usage restrictions, which limits their impact. Thus, leveraging the federal programs with state matching funding greatly enhances the ability of the businesses to bring new technologies to market. NC is among a handful of forward-thinking states with a matching program to augment the federal funds and help its small businesses commercialize new technologies and create jobs. SC, KY, and VA copied NC’s program.

IMPLEMENTATION DETAILS

- **Basics:** Any NC-based small business that wins a highly competitive Phase I SBIR or STTR award is eligible for state matching funds to leverage the federal funds. Statutorily, the match can be 100% of the federal award, up to a maximum of \$100,000.
- **Organization(s):** The NC Board of Science, Technology & Innovation, whose staff has administered the Program efficiently and effectively since its inception in FY 2006, would continue to administer the Program and track and report its impacts.
- **Scope:** SBIR/STTR grants are awarded to small businesses statewide. Each business receiving these federal grants is eligible to apply for the state matching funds.
- **Timeframe:** Annual and recurring, as long as funding challenges exist.

RECOMMENDED FUNDING:

- **Amount:** Recurring \$5 million, annually.
- **Source:** Expanded state appropriations.

EXPECTED OUTCOMES: With continued funding, the expected outcomes would be similar to those produced in the Program’s first six years of operation, as outlined below. Specifically, with \$16.5 million in funding to date, the Program has enabled nearly 200 small businesses throughout NC to³:

- Create or retain more than 485 high-wage, high-skill private sector jobs;
- Bring to market biotechnology, nanotechnology, medical technologies, computer software, military technologies, pharmaceuticals, textiles, and other innovative high-tech applications;
- Generate a 9-to-1 return on the state dollar through attracting more than \$85 million in external investment and more than \$73 million in follow-on federal funds;
- Increase the follow-on SBIR/STTR funding rate from 49% to 56%, six points above the U.S rate;
- Generate \$60 million in annual sales from products/services commercialized with state support.

³ 2012 One NC Small Business Program Assessment, North Carolina Board of Science, Technology & Innovation.

4. STARTUP INVESTMENT TARGETED EXEMPTION FOR NC (SITE NC) DESIGNATION

RECOMMENDED ACTION: Creates the Startup Investment Targeted Exemption for NC (SITE NC) designation, authorizing an exemption from NC capital gains taxes on investments in NC-headquartered (i.e., sited) startups.

CHALLENGE ADDRESSED: Like many states, NC has significant funding gaps at the seed, startup, and early stages that are critical for launching and developing innovative, high-growth companies. These companies are the primary job generators, developing and commercializing new technologies, products, and services that create new industries and transform current industries. Many traditional funding sources have moved upstream to larger deals, however, limiting company formation and growth.

A recent survey of more than 500 NC investors, entrepreneurs, and university faculty/staff reveals clearly that this lack of early stage funding is inhibiting technology commercialization and entrepreneurial growth within the state.⁴ In addition, because management talent often follows investment, lack of funding means a dearth of such talent for rising technology companies, with many companies initially nurtured within NC eventually moving out of state to pursue later rounds of financing.

IMPLEMENTATION DETAILS

- **Basics:** Eligibility would be limited to investors and companies qualified by the NC Secretary of State, according to clear definitions of “investor” and “startup company,” based on past programs in NC and existing programs in other states. The exclusion would be available only for investments after the effective date of the proposed legislation.
- **Organization(s):** The NC Secretary of State’s Office and the NC Department of Revenue.
- **Scope:** Investments in any NC company that meets the definition of a “startup company” would be eligible; only investors paying NC income taxes would be eligible.
- **Timeframe:** Ongoing, with periodic review to determine need for continuation.

RECOMMENDED FUNDING:

- **Amount:** Capped at level determined by Governor and Legislature.
- **Source:** Tax exemption.

EXPECTED OUTCOMES: Based on the results from other states, the program could be expected to:

- Encourage NC residents to invest in NC startups to help them grow;
- Encourage the creation and growth of companies that will attract follow-on investments, and subsequent taxable gains from venture funds and public equity markets;
- Provide tax exemptions only for successful ventures; startups that do not succeed will not realize gains and will not receive tax benefits;
- Spur economic growth and job creation *before* exemptions are taken;
- Increase movement and agglomeration of capital and investors to the state.

⁴ The Innovation-to-Jobs Working Group staff conducted this survey during August 2014.

5. VENTURE MULTIPLIER FUND (VMF)

RECOMMENDED ACTION: Creates early stage investment fund, consisting of fund-of-funds and a direct-investment fund component, to invest in early stage commercial ventures.

CHALLENGE ADDRESSED: NC's Academic R&D per State GDP ranks well above the U.S. average and fifth among U.S. states, behind leaders such as MD, MA, and NM. With this R&D activity, the seeds of innovation are planted in our universities. Still, venture investments in NC companies, historically not a strength of the state's innovation ecosystem, are at a 10-year low. Not only do many NC companies fail to achieve success because of limited capital, many emergent NC companies, nurtured by public and private resources, including the state's universities, leave NC once outside funding is procured.

The lack of early stage private capital to commercialize this R&D means we are failing to reap the economic growth and job creation that could be produced. The lack of early stage private capital to commercialize intellectual property and boost the state's entrepreneurial climate means fewer homegrown companies that generate jobs, become good corporate citizens, and increase the state's corporate and personal tax base.

IMPLEMENTATION DETAILS

- **Basics:** The Venture Multiplier Fund contains two parts: (1) a Fund of Funds, with \$90 million in capital (eligible funds would have \$10 million or more); and (2) a direct investment fund for NC companies, with \$30 million in capital (cap of \$300,000 per company).
- **Organization(s):** Possibilities include financial institutions, such as Grosvenor Capital (manager of the NC Innovation Fund), Hamilton Lane, or comparable asset management firms.
- **Scope:** Each invested fund must have a headquarters in the state with at least two managers, each with at least five years of experience investing in innovation-based small businesses. Additionally, managers must have expertise in NC's strongest industries. Investees must match every dollar of the Fund with \$2 in private capital. A cap of \$15 million in public funding per fund is recommended. Investments throughout the state will be eligible.
- **Timeframe:** One-time investment, but a self-financing sustainable component (such as an evergreen fund) will be examined as a potential fund characteristic.

RECOMMENDED FUNDING:

- **Amount:** \$120 million, one time.
- **Source:** Long-term investible state-focused funds.

EXPECTED OUTCOMES: Based on the performance of similar funds in other states, the VMF could be expected to:

- Increase the establishment of additional venture offices, funds, and investors into the state;
- Make additional funding of at least \$360 million (1/3 state funds and 2/3 private funds) available to address the state's lack of early seed funding;
- Increase jobs, corporate and personal tax revenues, and corporate citizenship contributions;
- Increase local investment and management talent as the program draws investors from outside NC.

6. RALLYING INVESTORS & SKILLED ENTREPRENEURS FOR NC (RISE NC) NETWORK

RECOMMENDED ACTION: Creates a statewide network that develops and leverages existing NC entrepreneurial management talent, and recruits world-class investors, skilled entrepreneurs, and managers to NC. Coordinated components (described below) include the statewide expansion of the successful Blackstone Entrepreneurs Network, an entrepreneurial fellowship program, the Governor's Master Investor Initiative, recruiting targeted professionals with NC ties, and an advertising campaign targeting professionals in high-cost technology states such as CA, MA, and NY.

CHALLENGE ADDRESSED: Behind a lack of investment capital, the most significant impediment to the development and growth of innovative technology-based companies in NC is the lack of seasoned management and entrepreneurial talent. NC's successful serial entrepreneurs who want to engage with university startups need to be paired with university company founders, who often serve as the chief scientific/technology officers rather than the chief executive officers of their startups. But this alone cannot fulfill the needs for talent. NC needs to grow additional talent and must also create a compelling recruitment package (as exemplified by the programs proposed here by the Innovation-to-Jobs Working Group) for attraction of outside serial funders and entrepreneurs, and then reach out to targeted individuals through either personal contacts or advertising campaigns. With these recommendations, NC should recruit the top venture firms in Silicon Valley and the Northeast U.S. for the establishment of NC offices.

The timing of these activities is propitious. NC, through its world-class universities, technology marquee companies (e.g., SAS, Red Hat, Cree), as well as its multitude of top rankings in business, workforce, manufacturing, and quality of life, has generated significant attention. Meanwhile, technology hotspots like Silicon Valley and Boston, with their long commuting times, high housing costs, high taxes, and other social and economic pressures, provide fertile ground for recruitment of significant innovators. Implementation of these recommendations would attract the needed talent, both within and from outside the state.

IMPLEMENTATION DETAILS

- **Basics:**

- **Statewide Blackstone Entrepreneurial Network**

A new statewide entrepreneurial network, based on the successful Blackstone Entrepreneurial Network already existing in the Triangle, will connect serial entrepreneurs to university startups. In 2011, the Blackstone Charitable Foundation provided a \$3 million gift to establish the Blackstone Entrepreneurs Network in Research Triangle Park. The Network's mission is to help catalyze the regional development of the Triangle's entrepreneurial ecosystem and thereby strengthen economic development in the area. In its pilot phase, the Network has created a tightly connected team of 13 Entrepreneurs-in-Residence (EIRs) to help identify marketable innovations out of area universities and regional startups with the greatest potential to become high-growth companies. The Network's initial partners currently include UNC-Chapel Hill, Duke University, NC State, NC Central University, and the Council for Entrepreneurial Development (CED). New locales outside the Triangle, as well as additional EIRs in the Triangle, would replicate, where possible, and modify, as needed, the current Blackstone model, expanding the number of

EIRs to about 30 from across the state. The potential exists for Blackstone Charitable Trusts to continue their sponsorship with the matching of state funds.

- **Entrepreneurship Fellowship**

Creates a fund for two-year fellowships of \$150,000, with half the amount paid by the State-supported fund, and the other half matched by the benefitting company for at least the first year, which would encourage skilled C-level managerial talent to work with innovative, high-growth companies in NC. If the company is no longer in business in year two, or the executive is let go for no "fault," the executive would be able to collect the remainder of the \$150K if he/she remains in NC during that two-year period. Companies would apply first to participate in the program, and a desired hire would need to be approved by a Fellow Selection Committee.

- **The Governor's Master Investor Initiative**

Lists 5-10 world-class professional investors, identified by the Working Group, with ties to NC. The Governor would personally reach out to these investors to sell them on NC and encourage them to relocate here.

- **The NC Talent Consortium**

Consists of public and private university alumni and development offices, as well as representatives from the Economic Development Partnership of NC, to identify and execute activities to enhance the return of alumni to the state.

- **NC Recruitment Ad Campaign**

Runs advertisements targeting high net-worth individuals with funding track records and serial entrepreneurs in technology hot spots, such as Silicon Valley, Boston, and New York City. The ads describe NC's unique blend of innovation and quality of life assets.

- **Organization(s):** Blackstone Entrepreneurial Network (lead), Governor's Office, Economic Development Partnership of NC, University Alumni and Development Offices.
- **Scope:** Efforts would be statewide.
- **Timeframe:** Launch in 2015, or as soon as funding is secured.

RECOMMENDED FUNDING:

- **Amount:** \$7.5MM annually, for three years.
- **Source:** Expanded state appropriations, leveraged 1:2 by foundation and other private sources.

EXPECTED OUTCOMES:

- Development of a robust integrated network of exceptional entrepreneurs working collaboratively with existing entrepreneurial support groups as well as advocacy groups and funders, for the benefit of high-potential/growth companies statewide;
- Enabling of more startup companies to successfully become growth firms in a shorter period of time, resulting in significantly increased product and company innovations, jobs, and wealth;
- The relocation of several significant investors/corporate leaders to NC, thereby improving the innovation climate through additional funds, investments networks, and talent;
- The return of hundreds of alumni to the state, bringing corporate and entrepreneurial talent;
- Startups with lower failure and higher growth rates compared to relevant benchmarks (e.g., previous rates in NC; contemporaneous rates in surrounding states), and greater ability to raise additional rounds of investment.

NEXT STEPS

During the coming months, the Governor will work directly with state policy makers, higher education leaders, business leaders, investors, and others to fund and implement each of the six recommendations outlined above. Every day, other competing states and countries are producing similar recommendations because they recognize and want to capitalize on the tremendous economic and societal value of innovation. In light of this increasing global competition and the large-scale investments that other countries and states are making in their innovation frameworks, North Carolina must continue to increase its innovation-focused investments in programs such as these.

When it does, North Carolina will become the go-to place for innovation, the place where the world looks to create the “next big thing” and to solve its greatest problems, a state thriving with innovative people, companies, organizations and culture. It will become the next great place to live and work, to start and grow an organization: a place where innovation is embraced and championed and where people come to make their innovation dreams come true.

**APPENDIX:
MEMBERS OF THE GOVERNOR'S INNOVATION-TO-JOBS WORKING GROUP**

University/Technology Commercialization	Investor/Industry
Chris Brown (Co-Chair) Vice President for Research & Graduate Education UNC General Administration	Clay Thorp (Co-Chair) General Partner Hatteras Venture Partners
Judith Cone Asst. to Chancellor for Innovation & Entrepreneurship UNC-Chapel Hill	John Cambier Founding Managing Partner IDEA Fund Partners
Joseph DeSimone Chancellor's Eminent Professor of Chemistry UNC-Chapel Hill	Igor Jablov Entrepreneur in Residence Blackstone Entrepreneurs Network
Galen Hatfield Vice President, Commercial Programs Division RTI International	Karen LeVert CEO and Co-Founder Southeast TechInventures, Inc.
Terri Lomax Vice Chancellor for Research, Innovation & Econ. Dev. NC State University	Robert Long Co-Founder & Partner Long Miller & Associates
Laura A. Schoppe President Fuentek, LLC	Mitch Mumma General Partner Intersouth Partners
Eric Tomlinson President Wake Forest Innovation Quarter	Steve Nelson Co-Founder EiPi Systems
Eric Toone Vice Provost & Director, Innovation & Entrepreneurship Duke University	Carlos Parajon Co-Founder Harbor Island Equity Partners

Convener and Leader

Thomas Stith, Chief of Staff to Governor Pat McCrory

Staff

John Hardin, Executive Director, Office of Science, Technology & Innovation, NC Department of Commerce

Scott Doron, Assistant Director, Office of Science, Technology & Innovation, NC Department of Commerce

Dennis English, Director, Office for Historically Underutilized Businesses, NC Department of Administration



Direct questions or comments to:

Office of Science, Technology & Innovation
North Carolina Department of Commerce
301 North Wilmington Street • 1326 Mail Service Center
Raleigh, North Carolina 27699-1326
919-814-4639

www.nccommerce.com/sti